What Is Claimed Is:

1. A control system for an automotive vehicle having a vehicle body comprising:

a yaw rate sensor generating a roll rate signal corresponding to a yawing angular motion of the vehicle body;

a lateral acceleration sensor generating a lateral acceleration signal corresponding to a lateral acceleration of a center of gravity of the vehicle body;

a steering angle sensor generating a steering angle signal corresponding to a hand wheel angle;

a plurality of wheel speed sensors generating wheel speed signals corresponding to each four wheel speed of the vehicle; and

a yaw stability control unit and a roll stability control unit coupled to said yaw rate sensor, said lateral acceleration sensor, said steering wheel angle sensor and said plurality of wheel speed sensors, said yaw control unit and said roll stability control unit determining a respective yaw stability control signal and a roll stability control signal from the yaw angular rate signal, the lateral acceleration signal, the steering wheel angle signal, and the wheel speed signals; and

an integration unit coupled to the yaw stability control unit and the roll stability control unit, said integration unit determining a safety system control signal in response to the yaw stability control signal and the roll stability control signal.

2. A system as recited in claim 1 wherein the roll stability control unit comprises a wheel normal loading detection unit generating a wheel lift signal.

3. A system as recited in claim 1 wherein said wheel normal loading detection unit generates a wheel loading signal in response to vehicle velocity, yaw rate, slip angle and steering wheel angle during an active wheel lifting detection cycle.

4. A system as recited in claim 3 wherein said roll stability control unit comprises a rollover event detection unit generating a flag in response to said wheel loading signal or the wheel lift signal.

5. A system as recited in claim 4 wherein said roll stability control unit comprises a roll angle estimation unit generating a relative roll angle signal.

6. A system as recited in claim 5 wherein said roll stability control unit comprises a roll feedback control unit generating the roll stability control signal in response to the roll angle signal.

7. A system as recited in claim 1 further comprising a switch for decoupling said yaw stability control unit and the roll stability control unit.

8. A system as recited in claim 1 further comprising a safety system receiving said safety system control signal.

9. A system as recited in claim 8 wherein said safety system comprises a brake system

10. A system as recited in claim 9 wherein said brake system comprises a brake pressure command generation unit generating a brake command in response to said safety signal.

11. A system as recited in claim 10 wherein said brake command comprises a right front brake command, a right rear brake command, a left front brake command, and a left rear brake command.

12. A control system as recited in claim 8 wherein said safety system comprises an active rear steering system.

13. A control system as recited in claim 8 wherein said safety system comprises an active front steering system.

14. A control system as recited in claim 8 wherein said safety system comprises an active anti-roll bar system.

15. A control system as recited in claim 8 wherein said safety system comprises an active suspension system.

16. A system as recited in claim 1 wherein the roll stability control unit and the yaw stability control unit are distinct.

17. A method of controlling an automotive vehicle comprising:

measuring a lateral acceleration of the vehicle body;

measuring the yaw rate of the vehicle body;

measuring a vehicle speed;

measuring a steering wheel angle position of a vehicle hand wheel;

determining a yaw control signal and a rollover control signal as a function of the lateral acceleration, the yaw rate, steering wheel angle and the vehicle speed.

18. A method as recited in claim 17 further comprising generating a safety system control signal as a function of the roll stability control signal and the yaw stability control signal and activating a safety device in response to said safety system control signal.

19. A method as recited in claim 17 wherein said step of activating a safety device comprises one selected from the group consisting of an active brake control system, an active rear steering system, an active front steering system, an active anti-roll bar system, and an active suspension system.

20. A method as recited in claim 17 wherein determining a roll stability control signal comprises generating a wheel lift flag in response to a wheel normal loading signal during an active wheel detection cycle.

21. A method as recited in claim 20 wherein determining a normal wheel loading comprises determining a normal wheel loading in response to a rolling radius.